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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/044,490      | 01/09/2002  | Yuki Nakamura        | 2271/66507          | 9287             |

7590 07/26/2004

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| EXAMINER |
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ANGEBRANDT, MARTIN J

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| ART UNIT | PAPER NUMBER |
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1756

DATE MAILED: 07/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/044,490

Applicant(s)

NAKAMURA ET AL.

Examiner

Martin J Angebranndt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 6/4/04, 5/30/02, 8/4/03.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 21, 24, 27, 30, 33, 36, 39, 42, 44-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-48 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2002 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/30/02 and 8/4/03.
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. 6/4/2004.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Continuation of Disposition of Claims: Claims withdrawn from consideration are 15-20,22,23,25,26,28,29,31,32,34,35,37,38,40,41 and 43.

1. The restriction is reformulated from that of the mailing of 5/20/2004, but the applicant was contacted on 14 June 2004 and in a discussion with Peter Agustin (USPTO), Peter Teng made an election as set forth below and in the interview summary attached. Responses to the traversal arguments are presented below.

The examiner would like to point out that it has been held in the courts that the “applicant has [an] obligation to call the most pertinent prior patent to [the] attention of [the] Patent Office in a proper fashion.” [Penn Yan Boats, Inc. V. Sea Lark Boats, Inc., et al. 175 USPQ 260 (DC SFla 1972)]. The examiner would appreciate the applicant identifying why the cited reference is pertinent including relevant portions of the document cited.

The examiner notes that numerous references were supplied by the applicant, some of which do not seem relevant (JP-04-163839, JP 04-096304 and JP 03-138946)

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
- I. Claims 1-14,21,24,27,30,33,36,39,42 and 44-48, drawn to a phase change optical recording medium, classified in class 430, subclass 270.13.
  - II. Claims 15-18, drawn to a sputtering target having a AgInSbTe composition, classified in class 420, subclass 576.
  - III. Claims 19,22,25,28,31,34,37,40 and 43, drawn to a methods for initializing or determining the optimum recording conditions on an optical recording medium using a laser beam, classified in class 430, subclass 269.
  - IV. Claims 20,23,26,29,32,35,38 and 41, drawn to apparatus including a laser beam capable of initializing or determining the optimum recording parameters for a phase change optical recording medium, classified in class 360, subclass 100.

3. Inventions group II and group I are related as apparatus and product made. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a different product or (2) that the product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case the recording layer may be made by vapor deposition or vacuum evaporation techniques and/or may be formed using separate sputtering targets for each element or at least plural sputtering targets.

4. Inventions group I and group III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the optical recording medium may be initialized using bulk means or during deposition the substrate may be heated to obviate the need for a separate initialization step and the medium can be used without determining the recording characteristics for the high velocity recording and high laser powers set forth in claim 43. (ie a lower laser power may be used to determine the recording characteristics at a lower velocity). The examiner also notes that one medium could be used for the determination and others not tested but embossed with the performance data. **The process and apparatus limitations do not even include the specifics of the optical recording media composition.**

5. Inventions group I and group IV are related as product and apparatus for use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different

apparatus or (2) the product as claimed can be used in a materially different process of using that apparatus (MPEP § 806.05(h)). In the instant case the optical recording medium may be initialized using bulk means or during deposition the substrate may be heated to obviate the need for a separate initialization step and the medium can be used without determining the recording characteristics for the high velocity recording and high laser powers set forth in claim 43. (ie a lower powered laser may be used to determine the recording characteristics at a lower velocity).

6. Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are used in different steps in with the optical recording medium, (ie sputtering the coat the medium and intialization/charachtorization to ready it for recording).

7. Inventions II and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01 In the instant case the different inventions are used in different steps in with the optical recording medium, (ie sputtering the coat the medium and initialization/characterization to ready it for recording).

8. Inventions III and IV are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus may be used for simple recording, rather than initialization or characterization and may be used at different powers or rotations velocities for the disk

9. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

10. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

11. During a telephone conversation between Vincent Agustin (USPTO) and Peter Teng on 06/14/2004 a provisional election was made with traverse to prosecute the invention of group I, claims 1-14,21,24,27,30,33,36,39,42,44-48. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15-20,22,23,25,26,28,29,31,32,34,35,37,38,40,41 and 43 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

12. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

13. Applicant's election with traverse of the claims directed to the optical recording medium in Paper No. 6/4/2004 and in the interview of 6/14/2004 is acknowledged. The traversal is on the ground(s) that the groups are not independent due to the dependencies of the various statutory classes of claims upon one another. This is not found persuasive because although the applicant has tried to blur the distinctions between the statutory classes through a drafting of the claims in a manner similar to product by process claims, the articles, apparatus and process of use are still distinct and the applicant would have a burden similar to that set forth in MPEP 2113

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to establish for instance that process of characterizing the medium has an effect in the medium or the initialization process materially effects the resultant medium, that the apparatus had a effect on the process for initialization or characterization. No evidence is present to support this position relating to the criticality of the materials of the various groupings or a showing that they cannot be used in other processes.

The amended requirement is deemed proper.

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1-4, 7,21,24,27,30,33,36,39,42 and 44-48 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yamada et al. EP 0717404.

Examples 2 and 3 in table 2 have the compositions shown in tables 2 as the recording layer in media comprising a polycarbonates substrate, a 200 nm ZnS-SiO<sub>2</sub> lower dielectric layer,



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a 25 nm recording layer, a 30 nm ZnS-SiO<sub>2</sub> upper dielectric layer, a 100 nm Al alloy reflective layer and a 5 micron UV cured resin as the protective layer. The sum of the Te and Sb are 91 and 85.4 % respectively. Comparative examples 1 and 2 use the same structure and meet the limitations of the claims. (table 2, cont). The sum of the Te and Sb are 99.5 and 95.9 % respectively. The benefits of adding 2% nitrogen is illustrated in table 3 on page 12. The addition of Ti, Cr or Si to the reflective layer is disclosed. (8/29-31). The examiner asserts that performance data is embossed in the lead in area of the medium.

With respect to claims 21,24,27,30,33,36,39 and 42, the examiner notes that all the media cited have been initialized and that these initializations are equivalent to that recited in the claims and that the applicant has the burden of proving otherwise through testing and the presentation of declaration evidence as set forth in MPEP 2113.

17. Claims 1-5, 7,21,24,27,30,33,36,39,42 and 44-48 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yamada et al. EP 0735158.

Examples 3, 5-7 comparative example 2 and 3 in table 2 have the compositions shown in tables 2 as the recording layer in media comprising a polycarbonates substrate, a 200 nm ZnS-SiO<sub>2</sub> lower dielectric layer, a 25 nm recording layer, a 30 nm ZnS-SiO<sub>2</sub> upper dielectric layer, a 100 nm Al alloy containing 1 % Si as the reflective layer and a 10 micron UV cured resin as the protective layer. The sum of the Te and Sb are 85.5, 92,9291 and 94.5 % respectively. Example 10 in table 2 on page13 also includes nitrogen. The addition of various elements to the recording layer is disclosed. (7/48-52). The use of various alloys of Al, Au, Ag and Cu are disclosed. (9/26-27)

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18. Claims 1-2, 7,21,24,27,30,33,36,39,42 and 44-48 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Iwasaki et al. JP 03-240590.

See examples E and F in table 1 (page 5)

19. Claims 1-2, 7,21,24,27,30,33,36,39,42 and 44-48 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Iwasaki et al. JP 04-078031.

See examples E and F in table I-1 (page 7)

20. Claims 1-5, 7,21,24,27,30,33,36,39,42 and 44-48 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yuzurihara et al. JP 11-070737.

Examples 21,24 and 26-29 in tables 2 and 3 have the compositions shown in these tables as the recording layer in media comprising a polycarbonates substrate, a 170 nm ZnS-SiO<sub>2</sub> lower dielectric layer, a 18 nm recording layer, a 20 nm ZnS-SiO<sub>2</sub> upper dielectric layer, a 120 nm Al alloy containing Ti as the reflective layer and a UV cured resin as the protective layer. The sum of the Te and Sb are 90.4 for example 21 and 89.2 % for the others. Note that addition of nitrogen to the recording layers in examples 27-29.

21. Claims 1-4,7-11,21,24,27,30,33,36,39,42 and 44-48 are rejected under 35 U.S.C. 102(a) as being fully anticipated by Miura et al. JP 2002-002116.

See examples 8 and 22 in table 1 on page 7.

22. Claims 1-4,7-11,21,24,27,30,33,36,39,42 and 44-48 are rejected under 35 U.S.C. 102(e) as being fully anticipated by Miura et al. '121.

See examples 8 and 22 in table 1 on page 7.

23. Claims 1-4,7-11,14,21,24,27,30,33,36,39,42 and 44-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over **either one of** Yamada et al. EP 0717404, Yamada et al. EP

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0735158, Iwasaki et al. JP 03-240590 **or** Yuzurihara et al. JP 11-070737, **in view of** Yamada et al. EP 1058249.

Yamada et al. EP 1058249 teaches  $\text{Ag}_{0-10}\text{In}_{2-12}\text{Sb}_{55-70}\text{Te}_{22-32}$  which may have B, C, N, Si, Se or Sn added to them [0026-0027]. The addition of 0.5 % Ge is disclosed in example 6 (table1). The use of the range of 0 to 5% is disclosed in claims 4. These additives improves the stability of the readout signals and the life of recorded data and prevent undesired crystallization of the amorphous marks [0044-0046]. The use of Al, Ag, Au, Cu, Ta and alloys thereof, which may have Cr, Ti, Si, Cu, Ag, Pd or Ta added is disclosed [0071].

It would have been obvious to one skilled in the art to modify the compositions of **either one of** Yamada et al. EP 0717404, Yamada et al. EP 0735158, Iwasaki et al. JP 03-240590 **or** Yuzurihara et al. JP 11-070737 by adding 0.5 3% Ge as taught by Yamada et al. EP 1058249 with a reasonable expectation of realizing the benefits ascribed to the addition of the Ge by Yamada et al. EP 1058249.

24. Claims 1-14,21,24,27,30,33,36,39,42 and 44-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over **either one of** Yamada et al. EP 0717404, Yamada et al. EP 0735158, Iwasaki et al. JP 03-240590 **or** Yuzurihara et al. JP 11-070737 **combined with** Yamada et al. EP 1058249, in view of Ohno et al. '166, Horie et al. '273 or Tomie et al. 2000-228032.

Ohno et al. '166 teaches silver alloys with 0.2 to 2% of Ti, Pd, Pt (10/5-14) as reflective layers for phase change recording media. The use of Al with 0.2 to 2% of Ta, Ti, Cr, Si, Pd, Pt is disclosed. (16/57-68). These alloys have improved adhesion and corrosion resistance (lower/reduced reactivity).

Horie et al. '273 teach the addition of 0.5-5% Ta, Ti, Cr, and the like to Al reflective layers to provide corrosion resistance. (6/18-23).

Tomie et al. 2000-228032273 teach the addition of Ta, Ti, Cu, and the like to Ag reflective layers to provide corrosion resistance. (6/18-23).

It would have been obvious to modify the invention of **either one of** Yamada et al. EP 0717404, Yamada et al. EP 0735158, Iwasaki et al. JP 03-240590 **or** Yuzurihara et al. JP 11-070737 **combined with** Yamada et al. EP 1058249 by using alloys known in the art to have improved adhesion and resistance to corrosion such as those disclosed by Ohno et al. '166, Horie et al. '273 or Tomie et al. 2000-228032, particularly in view of the teachings of alloyed reflective layers by Yamada et al. EP 1058249.

25. Claims 1-4,14,21,24,27,30,33,36,39,42 and 44-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over **either one of** Yamada et al. EP 0717404, Yamada et al. EP 0735158, Iwasaki et al. JP 03-240590 **or** Yuzurihara et al. JP 11-070737, **further in view of** Ando et al. '175.

Ando et al. '175 describes the embossing of data relating to disk size, read out rate, recording density, serial numbers, linear velocity conditions, read power, peak power, base power and manufacture information (15/55-16/9)

To support the assertion that the information of the claims is formed in an embossed manner as asserted by the examiner above, the examiner cites Ando et al. '175 which teaches the provision of control data and specification data for the optical recording medium in a non-write-able portion of the medium.

26. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or

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improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

27. Claims 1-14,21,24,27,30,33,36,39,42 and 44-48 are rejected under the judicially created doctrine of double patenting over claims 1-11 of U. S. Patent No. 6,592,958 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: The claims seek coverage for the same subject matter, specifically optical recording media with specific InAgSbTe compositions and specific reflective layer compositions.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

JP 04-151286 teaches AgSbTeIn recording layers embraced by the claims (page 5, upper right).

JP 04-232779 teaches AgSbTeIn recording layers embraced by the claims (page 5, table)

JP 08-216522, EP 1058248 and Iwasaki et al. '493 teach InAgTeSbN recording layers.

JP 05-185731 teaches AgSbTeIn recording layers embraced by the claims [0021]

JP 2000-043418 teaches AgSbTeIn recording layers embraced by the claims (examples 22 and comparative examples 3 and 7)

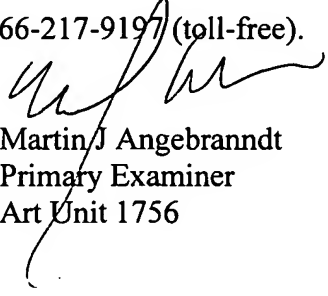
Kkukawa et al. EP 1011101 teaches InSbTeGeAg recording layers.

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebrannndt whose telephone number is 571-272-1378.

The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J Angebrannndt  
Primary Examiner  
Art Unit 1756

07/15/2004